

The Path to Energy Independence:
Growing A Washington State Biofuels Industry



June 28, 2005

**An Overview of Economic Opportunity, Provisions of the Senate Energy Bill, and
Initiatives Underway in Washington State**

Prepared by the Office of Senator Maria Cantwell

The Path to Energy Independence: Growing A Washington State Biofuels Industry ***An Economic Opportunity for Washington State***

While agricultural producers across the U.S. have long touted the energy- and economic-security benefits of fostering a domestic biofuels production industry, this country has nevertheless lagged behind in developing the technologies that would make a national biofuels strategy a reality. For example, 90 percent of the ethanol production in the U.S. is derived from corn—and is produced in just five Midwestern states. Meanwhile, other nations such as Brazil have taken the lead on producing biofuels from other crops, and in the process have diversified their economies and energy supplies, begun to minimize their dependence on foreign petroleum, and lowered prices for consumers. The key to growing this industry for the U.S. is investing in the demonstration and commercialization of new technologies that will make it possible to produce biofuels from a more diverse array of crops, including wheat straw and other biomass readily available in Washington state.

Producing biofuels in Washington state will:

- ***Lower the costs for consumers.*** Today, Washingtonians pay a premium for transporting ethanol and biodiesel products into the state from the Midwest. A Seattle biodiesel refiner estimates that transporting soybean oil in from Iowa adds 25-50 cents for every gallon of biodiesel. By producing biofuels in Washington state, we can eliminate these transportation costs and lower prices at the pump.
- ***Provide economic security for Washington state farmers.*** Researchers at Washington State University estimate that the state has the capacity to produce 200 million gallons of ethanol from wheat straw, and up to 1.2 billion gallons with technology improvements. In fact, Whitman and Lincoln counties alone produce enough wheat straw to make 100 million gallons of ethanol. Meanwhile, biodiesel is another emerging opportunity for Washington state farmers, using canola or yellow mustard. These crops are particularly well-suited for Washington state, providing high yields without irrigation. Around Spokane, it's estimated that 500,000 acres a year could be put into oil seed production—enough oil to produce 25 million gallons of biodiesel. Statewide, at least 2 million acres could be put into oilseed production for biodiesel.
- ***Create jobs.*** Studies have estimated that biofuels production could bring important economic development to Eastern Washington, and the state as a whole. A single, 40-million gallon straw-to-ethanol plant would create almost 1,000 jobs during the construction phase, and more than 400 jobs during the plant's operation. The ongoing economic benefit for the counties immediately surrounding the plant would be almost \$20 million, and the state as a whole would see a benefit of more than \$26 million for construction of a single facility. Meanwhile, the Spokane County Conservation District has estimated that an \$11 million investment in an oilseed crusher and associated production of biodiesel could help sustain 350 jobs.
- ***Start curbing our dependence on foreign oil.*** Every year, Washingtonians use almost 2.8 billion gallons of gasoline. Displacing portions with home-grown biofuels can help reduce our dependence on foreign oil. Five years ago, biodiesel was virtually non-existent in Washington, but now we use more than a million gallons--making Washington state one of the top states in the nation. Meanwhile, ethanol represents less than 2 percent of the state's gasoline usage. Clearly, there is room to grow—and to grow a biofuels industry in Washington state.

The Path to Energy Independence: Growing A Washington State Biofuels Industry

Key Provisions of the Senate Energy Bill (S. 10)

The Senate energy bill contains a number of provisions key to moving forward on a national biofuels strategy. Specifically, Sen. Cantwell added a number of measures that will help spur biofuels production in the Pacific Northwest. Making ethanol and biodiesel from more diverse feedstocks—in more regions of the country—is essential to making biofuels a sustainable and cost-effective solution to our nation’s emerging energy needs. Experts agree the production of ethanol from sources of cellulosic biomass as the key to a long-term, national biofuels strategy. In fact, the federal Energy Information Administration (EIA) and others have concluded that “the ability to produce ethanol from low-cost biomass will be key to making it competitive as a gasoline additive.” The EIA also found that the cost of producing ethanol from cellulose-based feedstocks—anything from wheat straw, to grasses, forestry byproducts and municipal solid waste, all readily available in Washington state--could be reduced by as much as 60 cents per gallon with technology improvements.

Seizing The Technology Lead: The Senate energy bill contains a provision (Sec. 209) authored by Sen. Cantwell to establish an “Advanced Biofuel Technologies Program.” The new program provides \$550 million over five years to demonstrate technologies for production of ethanol and biodiesel from a more diverse array of materials—common to more regions of the country. Cantwell’s measure directs the Secretary of Energy to work toward developing and demonstrating no fewer than 4 different conversion technologies for producing cellulosic-based ethanol; and 5 technologies for co-producing biodiesel and value-added bioproducts. In other words, it would provide federal support for universities, private sector researchers and entrepreneurs who are striving to invent the next generation of biofuels technology, and help demonstrate them in real-world applications. The program also directs the Secretary to prioritize the demonstration of projects that will enhance the geographical diversity of alternative fuels production, and focus on developing technology related to feedstocks that represent 10 percent or less of our nation’s existing ethanol and biodiesel production—agricultural products like wheat straw, canola and mustard that are readily available in Washington state and throughout the Pacific Northwest.

Building a Market for New Biofuels: In addition to pioneering the next generation of technologies, the Senate’s energy bill would provide important incentives for the very first producers of new sources of biofuels. Agricultural producers across the country have long advocated the creation of a “Renewable Fuels Standard (RFS),” to ramp up the amount of ethanol and biodiesel blended with petroleum-based products in the U.S. The Senate bill is more ambitious than previous energy bills, as well as this year’s House-passed version. It contains an RFS that would require 8 billion gallons of renewable fuels usage by 2012. But in addition, it contains measures added by Sen. Cantwell (included in Sec. 204) to more than double the incentives for refiners to use ethanol made from cellulosic sources such as wheat straw, and to ensure that by 2013 the U.S. is producing at least 250,000 gallons of ethanol from these new sources. These provisions are designed to help build a market for the very first producers of ethanol from non-traditional, non-corn sources—an important way to help move the technology toward broader commercialization.

Federal Support for Biofuels Infrastructure: The Senate energy bill recognizes that a national biofuels strategy is in the long-term energy security interests of the U.S., and provides federal support for this emerging industry. First, the legislation authorizes federal loan guarantees for the first cellulosic ethanol facilities that produce 15 million gallons of ethanol or more (Sec. 204). Multiple sites in the Pacific Northwest are vying to be among the first in the U.S. to produce cellulosic ethanol. In addition, the bill would extend the biodiesel excise tax credit through 2010. Otherwise slated to expire in 2006, the tax credit is important to the very first refiners and distributors of biodiesel in Washington state, who are using this tax credit to lower costs to consumers at the pump.

The Path to Energy Independence: Growing A Washington State Biofuels Industry ***Initiatives Underway Today in Washington State***

In the last three years, enthusiasm for developing a Washington state biofuels industry has spread rapidly among farmers, consumers, entrepreneurs and state and local elected officials. In 2003, a bipartisan effort led to the Washington state legislature's passage of a number of specific incentives to promote an in-state biofuels industry. Sen. Cantwell's provisions in the Senate energy bill would add a federal dimension to the effort to get a Washington state biofuels industry off the ground.

The private sector along with local, state and federal government entities have helped push Washington state to the forefront in terms of "early adoption" of biofuels. Today, biofuels are being used by a number of entities, including: the City of Olympia, City of Seattle, City of Tacoma, Earthwise Excavation, Fort Lewis, Intercity Transit, King County Metro Transit, McChord Air Force Base, Saybr Contractors, Inc., Central Valley School District near Spokane, Northshore School District in the Puget Sound region, and the Washington State Ferries.

This year has also witnessed the opening of the first commercial-scale biodiesel refinery in the Puget Sound area, while retail fueling stations and distributors continue to pop up all around the state—from Seattle to Spokane, Fife, Bellingham, Bellevue, Olympia, Port Townsend, Orcas, Vashon and Bainbridge Islands. More fueling stations have also been mentioned for Issaquah and other East King County locations. A number of additional biofuels production facilities have also been proposed for Spokane, Moses Lake, Longview, Richland, Sunnyside, Seattle and Whatcom County. In many of these cases, obtaining financing—with some federal support—may be crucial to seeing some of these proposals through to construction. Meanwhile, Washington State University is a recognized leader in the area of bioproducts and agricultural research, which will help lower the costs of biofuels production.

Spokane: The Spokane County Conservation District is coordinating the efforts of several public agencies, private industry and agricultural producers to develop the biodiesel industry in Eastern Washington. These efforts include the production of agricultural feedstocks, building oilseed processing facilities, developing biodiesel processing plants, and increasing demand for the fuel. In the Spokane region, biodiesel would be refined using waste cooking oil and locally grown canola or yellow mustard. The SCCD has estimated that an \$11 million investment in an oilseed crusher and associated production of biodiesel could help sustain 350 jobs.

Moses Lake: A 40 million gallon ethanol plant has been proposed for Moses Lake. If built, the plant would be the first in the U.S. to produce ethanol from wheat and barley. A 2001 study by WSU and the National Renewable Energy Laboratory estimated that a 40 million gallon plant in Moses Lake could produce ethanol at approximately \$1.70 a gallon, and would provide an economic "value-add" of \$19.6 million to Grant, Franklin, Adams and Lincoln counties.

Richland: A 17 million gallon biodiesel production facility has been proposed for Richland, Washington, which would be supplied by as much as 120,000 acres of oil seed production in the Columbia Basin area.

Seattle: Earlier this year, Seattle Biodiesel became the first large, commercial-scale production facility in the Puget Sound. Currently awaiting final permitting from the City of Seattle, the plant is operating in testing mode, in which it can produce and sell biodiesel to petroleum dealers and retailers. For example, Propel Fuels and Laurelhurst Oil have partnered to dedicate two new pumps near University Village to the sale of Seattle Biodiesel. The south-Seattle refinery expects to make 800,000 gallons of biodiesel this year, with the capacity to make 5 million gallons of renewable fuel annually.